What is claimed is:

1. Single crystal SiC wherein

heat treatment is performed in an inert gas atmosphere under a state where a cutting plane of a single crystal α-SiC substrate which is formed by cutting along (1 1 $\bar{2}$ 0) Miller index plane ± 10°, and (2 2 0) Miller index plane of a polycrystalline β-SiC plate are superimposed on each other, whereby single crystal having a crystal orientation of an orientation of said cutting plane is integrally grown in said polycrystalline β-SiC plate in conformity with said single crystal α-SiC substrate.

2. Single crystal SiC according to claim 1, wherein polycrystal which is produced in a plate-like form by a thermal chemical vapor deposition method is used as said polycrystalline β-SiC plate.

3. A method of growing single crystal SiC in which heat treatment is performed while superimposing a single crystal α-SiC substrate and a polycrystalline β-SiC plate, wherein

under a state where (2 2 0) Miller index plane of said β-SiC plate is superimposed on a cutting plane of said single crystal α-SiC substrate which is formed by cutting along (1 1 $\bar{2}$ 0) Miller index plane ± 10°, said single crystal α-SiC substrate and said polycrystalline β-SiC plate which are superimposed on each other are heat-treated in an inert gas atmosphere, whereby single crystal having a crystal orienta-

tion of an orientation of said cutting plane is integrally grown in said polycrystalline β-SiC plate in conformity with said single crystal α-SiC substrate.

4. A method of growing single crystal SiC according to claim 3, wherein polycrystal which is produced in a plate-like form by a thermal chemical vapor deposition method is used as said polycrystalline β-SiC plate.

5. A method of growing single crystal SiC according to claim 3, wherein each of at least one cutting plane of said single crystal α-SiC substrate, and at least one (2 2 0) Miller index plane of said polycrystalline β-SiC plate is processed into a smooth mirror face of 10 angstroms RMS or less.

6. A method of growing single crystal SiC according to claim 4, wherein each of at least one cutting plane of said single crystal α-SiC substrate, and at least one (2 2 0) Miller index plane of said polycrystalline β-SiC plate which is produced in a plate-like form by the thermal chemical vapor deposition method is processed into a smooth mirror face of 10 angstroms RMS or less.

7. A method of growing single crystal SiC according to claim 3, wherein a thin layer configured by SiO_2, Si, or a mixture of these materials is interposed in a superimposed portion of said cutting plane of said single crystal α-SiC substrate and said (2 2 0) Miller index plane of said poly-

crystalline β-SiC plate.

8. A method of growing single crystal SiC according to claim 4, wherein a thin layer configured by SiO_2, Si, or a mixture of these materials is interposed in a superimposed portion of said cutting plane of said single crystal α-SiC substrate and (2 2 0) Miller index plane of said polycrystalline β-SiC plate which is produced in a plate-like form by the thermal chemical vapor deposition method.

9. A method of growing single crystal SiC according to claim 3, wherein a temperature of said heat treatment is set to be in a range of 2,100 to 2,300°C.

10. A method of growing single crystal SiC according to claim 4, wherein a temperature of said heat treatment is set to be in a range of 2,100 to 2,300°C.